DEPARTMENT OF HEALTH & HUMAN SERVICES Public Health Service

Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30333

TB Notes
No. 3, 1998

Dear Colleague:

The fiscal year (FY) 1999 cooperative agreement applications, which were due September 25, were received. Although Congress approved level funding for TB control activities for the fifth consecutive year, TB control programs will actually experience a relative reduction in funds available for TB prevention and control activities. This paradox is the result of fewer available unobligated ("carry-over") funds in FY 1999 consistent with improvements in the absorptive capacity of state and local health department TB control programs. Over the past few years, we had been able to rely on these unobligated funds to "stretch" our funding of TB program activities. As many of you know, the FY 2000 TB cooperative agreement will be recompeted and DTBE is in the process of developing a new announcement in partnership with TB controllers. On November 5, DTBE staff met with representatives of the National TB Controllers Association (NTCA) to discuss the draft document. This draft document had been circulated to various staff in the division and shared with all 68 cooperative agreement sites for comment. We currently plan to fund all sites for core TB control activities — completion of therapy, contact investigation, surveillance, and laboratory services — based on epidemiologic need (e.g., number of cases and increased program needs due to recent outbreaks). Additionally, we are developing consensus to define "good performance" on core activities to provide additional elimination-focused resources for activities such as high-risk-group-targeted tuberculin skin testing and treatment of infection (or preventive therapy). An overview of the FY 2000 application process will be provided on February 24 at the National TB Controllers Workshop.

Last year CDC sponsored a strategic planning process through the Model TB Centers to identify unmet training needs, coordinate TB training and educational resources, and foster collaboration among the persons who train and educate public and private sector providers of care to TB patients, both nationally and globally. A training summit held on October 22-23 in Oakland, California, resulted in the development of the *Strategic Plan for TB Training and Education*, which establishes priorities for the more effective targeting of training resources for the next 5 years. Rose Pray has an article in this issue on this important strategic plan.

At their last meeting, members of the Advisory Council for the Elimination of Tuberculosis (ACET) decided to review and update the 1989 Strategic Plan for the Elimination of Tuberculosis in the United States. A drafting subcommittee of ACET met at Corporate Square in Atlanta to develop the outline that was used to prepare a draft document for review. This initial draft reaffirms the commitment towards the elimination of TB from the United States, updates the definition, describes significant changes that

have occurred over the last decade, and identifies obstacles that must be overcome. The draft was presented to the full ACET membership for consideration during its meeting on October 7 and 8. Once this draft is revised, it will be shared for comment. We hope to finalize it during the spring of 1999. Those ACET members who participated in the drafting process are Dr. Charles Nolan, Dr. Michael Richardson, Dr. Michael Tapper, Dr. Pat Salomon, and Ms. Christina Larkin. Please note that in response to inquiries we've received recently, we have included in this issue an article that describes the structure and purpose of ACET as well as the current ACET membership roster.

Several other important meetings have been held recently or will be held in upcoming months. On August 26-28, the National Vaccine Program Office hosted a symposium on TB vaccine development in San Francisco. Participants included TB experts, immunologists, microbiologists, and vaccinologists who discussed the prospects for vaccine development. Advocacy issues were also raised and discussed by representatives of the American Lung Association (ALA). Also, CDC and the American Thoracic Society (ATS) co-sponsored a meeting in Atlanta September 14-15 to discuss the scientific basis for possible recommendations on the use of short-course TB preventive therapy and related issues. Some of these discussions were reflected in the recent recommendations to consider the use of 2 months of rifampin and pyrazinamide in PPD-positive persons with HIV infection (*MMWR* 1998;47[No. RR-20]). Please see the articles about these meetings later in this issue in the section "Updates from the Research and Evaluation Branch." The 38th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) was held in San Diego the week of September 25, and included some TB presentations and posters. Additionally, I participated in a pre-meeting TB workshop at the 36th annual meeting of the Infectious Disease Society of America (IDSA), held November 12-15 in Denver, Colorado. On November 15-19, the 126th Annual American Public Health Association (APHA) Convention was held in Washington, DC, at which Dr. Lee Reichman organized an important TB-related session. Finally, on November 23-26, a number of DTBE staff contributed scientific presentations in the 29th World Conference of the International Union Against TB and Lung Disease in Bangkok,Thailand.

We are proceeding with plans to hold the 1999 CDC National TB Controllers Workshop on Wednesday, February 24, the day before the fourth annual meeting of the International Union Against Tuberculosis and Lung Disease (IUATLD), North American Region. Both the TB Controllers Workshop and the IUATLD meeting will be held in Chicago, Illinois, at the Hotel Inter-Continental. The CDC TB field staff will meet on the afternoon of February 23, and there will be a business meeting of the NTCA on the morning of February 25. The IUATLD meeting will start the afternoon of February 25 and run through February 27. Questions about the TB Controllers Workshop may be directed to John Seggerson, (404) 639-8120, or Sherry Hussain, (404) 639-8989, at CDC or to Walt Page, (770) 455-0801, at the NTCA. Questions about the IUATLD meeting may be directed to Ms. Kitty McAndrews at (312) 243-2000.

The Tuberculosis Information Management System (TIMS) implementation is well underway with 100% of the intended reporting area recipients having installed TIMS. Also, TIMS has been installed at 100% of the previous SURVS-TB local sites and at 34 new TIMS local sites. DTBE has contracted for an additional TIMS trainer, Jim Vaughan. He and Kate Hedstrom O'Toole have provided TIMS 101, TIMS 201, and data transfer training in Chicago, Anchorage, and Indianapolis over the past few months, and will provide additional training in Jamaica Plain (Boston) and Atlanta in upcoming months. The most recent TIMS release was distributed in September 1998. It included resolution of problems and enhancements to the current version.

Several important articles on TB have recently been published in CDC's *Morbidity and Mortality Weekly Report (MMWR)*. I hope you will read them if you have not already done so. One is entitled "Acquired multidrug-resistant tuberculosis — Buenaventura, Colombia, 1998," *MMWR* 1998;47(No. 36). This presents the findings of the first investigation of multidrug-resistant TB (MDR TB) in Colombia, South America. In this issue of *TB Notes*, we have included an article about that investigation by Edwin Rodriguez from the perspective of DTBE field staff who participate in these investigations. The second *MMWR* article is "Recommendations for prevention and control of tuberculosis among foreign-born persons - report of the Working Group on Tuberculosis Among Foreign-Born Persons," *MMWR* 1998;47(No. RR-16). Nearly 40% of TB cases in the United States are in people born in areas of the world where TB is prevalent. In order to develop and update specific strategies to prevent and treat TB among foreign-born individuals, CDC convened a working group of TB control program staff and representatives from CDC's Division of Quarantine and Division of TB Elimination in May of 1997. The deliberations of the Working Group can be found in this report. The recommendations outline steps that federal, state, and local TB control programs can take to improve TB prevention for foreign-born populations. CDC strongly supports these recommendations and is committed to taking the next steps toward eliminating TB as a public health threat. Finally, two other important articles have been published most recently; the first is the one I mentioned above regarding short-course preventive therapy, entitled "Prevention and treatment of tuberculosis among patients infected with human immunodeficiency virus: principles of therapy and revised recommendations," *MMWR* 1998;47(No. RR-20). The treatment of patients who are infected with HIV as well as TB is critical and complicated. This article explains the intricate relationships between the drugs that are available to treat this deadly combination of diseases. Both physicians and nurses in the United States can apply to obtain continuing medical education (CME) or continuing nursing education (CNE) credits with this report. Several staff from DTBE helped with the development and implementation of this CME/CNE innovation as part of selected *MMWR* articles. In the same issue, "Notice to Readers: Use of short-course tuberculosis preventive therapy regimens in HIV-seronegative persons," announces an upcoming change in the CDC/ATS recommendation regarding the length of preventive therapy.

I am proud of the work by our contributors and the editorial staff in bringing out this issue of TB Notes. We have chosen to continue offering a wide diversity of articles, as they reflect both fascinating and important aspects of our collective commitment to the prevention, control, and eventual elimination of TB. As this calendar year approximates an end, I hope that you enjoy the upcoming holidays with your loved ones.

Kenneth G. Castro, MD

In This Issue

NOTE: The use of trade names in this issue is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Number 3, 1998

HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

Round-up of Texas TB Control Activities

Texas TB Hospitals' Long-Range Plan

In the last legislative session, the Texas legislature gave the Texas Department of Health (TDH) instructions to develop a long-range plan with options for the two hospitals operated by TDH. These two hospitals (South Texas Hospital in Harlingen and the Texas Center for Infectious Disease in San Antonio) care for TB patients who require lengthy hospitalization owing to drug resistance or other factors that preclude out- patient management. Over the last year, TDH staff have worked with a private consulting firm to develop this list of options.

Six options were developed and presented to a finance subcommittee of the Texas Senate. After much negotiation among various legislators, the Senate Finance subcommittee developed a proposal to renovate San Antonio's Texas Center for Infectious Disease (TCID) at a cost of $10.5 million. The responsibility for the administration of the hospital would then be transferred to the University of Texas Health Center at Tyler, which currently operates a hospital facility for TB patients. The renovated hospital in San Antonio would serve as the state's primary TB inpatient facility and as the state's primary TB quarantine facility.

The second part of the proposal includes building an entirely new hospital in Harlingen to replace the South Texas Hospital. It would be a 75-bed general hospital offering indigent care services in the Lower Rio Grande Valley. The hospital would serve patients from a four-county area in the Valley. The proposal for funding these two projects will be debated in the legislative session that begins in January 1999.

The adoption of this option will ensure that there will continue to be three hospital facilities in Texas (Harlingen, San Antonio, and Tyler) with areas devoted specifically to the care of TB patients. It will also provide a secure place to treat the small number of TB patients under court-ordered management of their disease.

TB Research Meeting Held in Texas

Approximately 30 persons interested in conducting research on a variety of topics related to TB control met in Austin at the Texas Department of Health on July 20, 1998, to discuss directions for TB research over the next 3 to 5 years. Presentations were made on the data currently being collected by the Texas Department of Health (through the Texas TB registry, the Texas TB drug resistance registry, and the Texas Department of Health microbiology laboratory) and on the procedures for accessing that data. Various participants told the group about their current research projects. The attendees discussed the

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process for building a research agenda (e.g., issues regarding how to create partnerships and collaborations with other entities). They mentioned some potential future projects and indicated an interest in holding a symposium among researchers to hear presentations on TB research projects taking place in Texas. The participants also discussed how the Texas Department of Health can enhance and encourage the investigation of TB-related issues in Texas.

Plans are underway to hold the second TB Research Symposium in Houston in late February or early March 1999. Researchers would be able to present either completed or ongoing TB research projects. For further information, contact Jeff Taylor or Ann Tyree at the Texas Department of Health TB Elimination Division, (512) 458-7447.

TB Control in Correctional Facilities Satellite Conference

The Texas Department of Health and the Texas Department of Criminal Justice are planning a 3-hour satellite conference on "TB Control in Correctional Facilities" to be broadcast February 24, 1999. The broadcast will be from 12 noon to 3 pm Central time. Since this program is funded by the US Department of Justice and the Texas Department of Health, there will be no charge to sites wishing to receive the broadcast.

The target audience for this conference includes health care professionals and security staff in correctional facilities as well as public health TB program staff who work with correctional facilities.

The satellite conference will include information on the status of TB in correctional facilities, transmission of TB, diagnosis and treatment of TB, basics of a screening program, transportation of persons with TB, intake issues, training for correctional staff to "think TB," and contact investigation. The program will be broadcast live from the video facility at Austin Community College. The program will include some pretaped video clips to enhance the presentations.

Those interested in becoming local downlink site coordinators should contact Ann Tyree or Ray Silva at (512) 458-7447 or by E-mail at ann.tyree@tdh.state.tx.us for further information.

—Reported by Ann Tyree
Texas Dept. of Health

North Carolina's TB Education and Promotion Activities

"'And one more item we need is...' If I had a penny for every time I heard this statement, I would be rich."

The North Carolina TB Control Branch team consists of the director, medical consultants, nurse consultants, a health educator, and surveillance and support staff. Four years ago, as the newly-hired health educator, I surveyed the training and education needs of TB nurses at the 100 local health departments and five community-based projects that were funded by the branch at the time. The survey return rate was 91%. Through the survey, I was able to identify the nurses' needs for training topics, ways to make teleconference trainings more beneficial, TB education materials needed, and the foreign languages in which the materials were needed. Working at the local health department level for 4 years has given me experience and insight concerning some of their needs for training and educational materials targeting the patient, staff, and public. My main customers are local health department staff across the state.

I have found that, in addition to conducting surveys, another important needs assessment tool that can be used is attendance at regional nurse consultant meetings with local TB nurses from various agencies, especially public health. Attending these meetings provides the opportunity to meet the nurses from all areas of the state (and place names with faces) and understand their needs and frustrations, and for them to learn what a health educator can do for them.

The TB Control Branch offers training courses throughout the year. In the spring, the four nurse consultants and I provide the "Introduction to TB Management" course to new TB staff members in public health, corrections, nursing homes, physician offices, industry, managed care, and hospitals. This course is offered at no charge in the eastern and western parts of the state to decrease local costs for staff to attend. Every July, the TB Branch, the American Lung Association of North Carolina, and the South Carolina TB program staff sponsor a multistate TB training session. Many national speakers are invited to this conference, called the TB/ Respiratory Disease Institute at Black Mountain, to share TB information. In the fall, the branch provides a TB Update Video Conference. This training conference is designed to update knowledge and skills about critical TB topics. Historically, the majority of participants have been public health nurses; we are attempting to attract other professionals as well to these courses.

North Carolina public health TB nurses, outreach workers, health educators, and other health care providers increase TB awareness and education efforts in their community during the second week of every June with "Make NC TB-Free" week. A highlight of the week is the Governor's official proclamation of the week-long event. To foster awareness and publicity, the North Carolina TB Control Branch has a collection of information and resource materials available for distribution (e.g., a three-part series of newspaper articles; radio public service announcements; bulletin board ideas; TB History in the World, United States, and North Carolina; TB logo artwork to be placed on posters, flyers, pamphlets; TB Information Sheet and copy of the Governor's Proclamation). The packet may be used throughout the year.

Based upon needs identified by public health nurses and other professionals, various TB education materials were

developed over the past 4 years. (Because of the length of the list, it has been placed in the "Training and Educational Materials" section of this issue.) If you are interested in receiving a sample of TB materials we have produced or learning more about health education, please call, write, or e-mail Mary Glyn Alligood, Health Educator, at (919) 733-0391, TB Control Branch, Div. of Epidemiology, NCDHHS, PO Box 29601, Raleigh, NC 27626-0601 or mary_glyn_alligood@mail.ehnr.state.nc.us

—Reported by Mary Glyn Alligood, M.A. Ed.
NC TB Control Branch

The Public Health Service Drug Pricing Program: Wyoming's Experience

In TB Notes Vol. 4, 1996, we printed an article entitled "The Drug Pricing Program." We have an update on the program from Alex Bowler in Wyoming, whose experience with the program has been very successful and encouraging.

Many TB control programs supply purified protein derivative (PPD) for TB screening. There are two commercially available PPD products, Aplisol and Tubersol. Recently there has been an increase in the price for 10-test and 50-test vials of Tubersol. Prior to May 1997, a 10-test vial of Tubersol purchased under the Minnesota Multistate Contracting Alliance for Pharmacy cost $4.38 and a 50-test vial cost $8.90. On May 1, 1997, these prices jumped to $9.21 and $19.86, more than double the previous price. On May 1, 1998, these prices increased another 38% to $12.68 for a 10-test vial and $27.34 for the 50-test vial.

CDC recently completed a randomized double-blind trial comparing the specificity of Aplisol with that of Tubersol. The conclusion was that the two commercial PPD reagents are essentially equivalent. However, the price of Aplisol is lower.

Aplisol is produced in Rochester, Michigan, by Parkdale Pharmaceuticals. Parkdale, formerly owned by Parke-Davis, was recently sold to King Pharmaceuticals, which is located in Bristol, Tennessee. Aplisol is marketed by Monarch Pharmaceuticals, a separate subsidiary of King that is also located in Bristol. Mr. Ed Bogart in Monarch's contract department has negotiated a price with the Minnesota Multistate Program effective May 1, 1998, of $9.21 for a 10-test vial of Aplisol and $20.00 for a 50-test vial. Mr. Bogart can be reached at (800) 776-3637.

There is even more good news for purchasers of tuberculin PPD. The Health Resources and Services Administration (HRSA) has a federal 340B Public Health Service Drug Pricing Program through which eligible entities can receive discounts for covered outpatient drugs such as Aplisol. To participate in the 340B program, you will need to demonstrate that your TB control program is an eligible entity. To do this, contact CDC at (404) 639-8015 to request information pertaining to eligibility for the drug discounting process.

Wyoming began using Aplisol on June 15, 1998. Our early experience in switching from Tubersol to Aplisol, becoming an entity eligible to participate in the 340B program, and ordering Aplisol from Monarch Pharmaceuticals resulted in pricing for both 10-test and 50-test vials of ***$.01 per vial*** plus the cost of shipping.

Other state TB control programs might want to consider switching to Aplisol for TB screening to realize the cost savings that are available. This may introduce some competition into the field of tuberculin PPD pricing and bring the cost of Tubersol more in line with the price of Aplisol. TB control programs can then continue to focus TB screening on those most at risk for infection

with *Mycobacterium tuberculosis* without being restricted by the cost of PPD tuberculin.

For specific information about the drug pricing program, please contact Captain Jimmy Mitchell at HRSA's Office of Drug Pricing Program by telephone at (301) 594-4353 or (800) 628-6297, or through the Internet at http://158.72.105.163/odpp/drug1.htm

—Reported by Alex Bowler, MPH, CHE
Wyoming TB Program

Alabama's Computerized Patient Management System

In TB Notes Vol. 3, 1996, we published an article entitled "Use of Laptop Computers in the Field - Alabama," by Frank Bruce, the now-retired TB Controller for Alabama. The following article provides an update on that report.

Approximately 4 years ago, the State of Alabama TB Control Program began to develop a computerized system for the management of patients being treated for TB. The system was originally designed to document each field encounter between TB staff and TB clients. All doses of medications delivered to the client and any procedures performed in the field — for example, sputa collection or skin testing — could also be recorded. This system has continued to be updated as new components have been developed and the needs of the outreach staff have been addressed.

The system now consists of three major components: **Laptop Outreach, System Administration, and Contact Information.** This is designed to be an "enter-as-you-go" documentation system. The laptop computers are carried by all field outreach staff when making visits to the client's home or place of work, a street corner, or wherever the medications are delivered. Information about the visit can be entered immediately: medications delivered, adverse drug reactions, and procedures performed for the TB patient. The outreach worker has information available to him or her about bacteriology, blood chemistry results, previous visits, medical and chest x-ray history, and even directions to the home or business. This system can also record a photograph of the patient to aid in identification when more than one staff person must make visits. There is a limited Notes section that can be utilized to enter significant information. The screens consist of a user-friendly point-and-click selection system. Information from field visits is uploaded to the area server each time an entry is made. This system is secure and password-protected and all information is kept confidential.

Information from the database can be used to generate a variety of reports, e.g., how many visits were DOT? How many visits were missed? Which TB staff person made the visit? How many and where were visits made to the client to observe medication ingestion? And how many total doses of medication did the client receive versus the total doses of medication ordered? These are just a few examples of the reports that can be generated from information entered by the TB outreach staff.

The system administration component is housed in a dial-up file server in each public health (PH) area. The laptop computers interact daily with the system administration server by modem to transmit visit information, thus integrating all patient information within a single system. The schedule for visits and other information is entered into the system administration component and downloaded into the laptops from the server each day. It serves as the registry for all TB patients in each of

the PH areas. All medical, social, and visit history is stored and is easily accessible from this database. The system allows the TB area manager to track all clinical information on patients within the area, make changes to medicine doses, and schedule outreach workers to visit patients. From the information entered and stored in the system, Alabama is able to generate several of the CDC "rainbow" (program management) reports.

The newest component to the system is the contact investigation tracking information. The Alabama Department of Public Health and the University of Alabama at Birmingham are currently involved in a contact behavioral study project. This study project coincided with the software development of the contact screens. The information that is gathered by the TB staff and entered into the contact system can be analyzed by the study group. Information on exposure history, location of exposure, and frequency of exposure to individual cases is captured for each contact. Medical and social information for the contact is also entered. Search features in the system allow outreach workers to identify contacts to multiple index cases and access previous exposure history, as well as treatment or preventive therapy.

Platforms used for the TB computer program have changed over the lifespan of the program. Initially, the program was developed in Windows 3.1 using Microsoft Access. With some modifications, it was converted to OS2. When Alabama began the process of changing platforms to Windows 95, the TB control program converted the computer program to Windows 3.11 where it currently resides. Plans are currently in place to convert the program to Windows 95. With grant aid from CDC, new servers and laptops have been purchased. Our programmers are exploring possible ways of converting the existing database to a system compatible with the Tuberculosis Information Management System (TIMS).

—Reported by Nancy L. Brook, MPH
Acting Director
and Jim Lynch
TB Computer Committee Chairperson
Alabama TB Control Program

Strategic Plan for TB Training and Education

A strategic planning process was funded by CDC for the purpose of identifying areas of highest training need, coordinating TB training and educational resources, and fostering collaboration among the key providers of training and education to public and private sector providers of care to TB patients. The strategic planning process involved CDC, the Model TB Centers, and 59 national and international TB experts in developing position papers and tentative objectives for the areas of (1) private sector, managed care provider education; (2) public health sector; (3) correctional facilities; (4) high-risk populations (the homeless, substance abusers, and HIV-infected persons); (5) international medical graduates and providers serving foreign-born populations; and (6) international audiences. A training summit held on October 22-23 resulted in the *Strategic Plan for TB Training and Education* that established priorities for the more effective targeting of training resources for the next 5 years. At the summit, participants reached consensus on the following 5-year goals (not in priority order):

1. Build, strengthen, and maintain collaboration among the key agencies and organizations in training
2. Build, strengthen, and maintain collaboration with global partners
3. Develop, improve, and maintain access

to TB training and education resources
4. Improve and sustain knowledge, skills, and practices tailored to local epidemiological circumstances
5. Identify and mobilize financial resources for TB training and education

Several 6-month strategic objectives (with time lines and lead responsibility) were established for each of these goals. Next steps include the distribution in early 1999 of the final strategic plan for TB training and education, and the development of an action plan to implement the priority objectives and recommendations delineated in the strategic plan.

—Reported by Rose Pray, RN, MPH
Division of TB Elimination

Advisory Council for the Elimination of Tuberculosis

Following is an excerpt from the charter of the Advisory Council for the Elimination of Tuberculosis (ACET), explaining the purpose, structure, function, and other aspects of ACET, followed by a list of the most recent ACET recommendations. The current membership roster is included as an attachment to this newsletter.

Purpose
The Secretary; the Assistant Secretary for Health; and by delegation, the Director, Centers for Disease Control and Prevention (CDC), are authorized under Sections 301 and 311 of the Public Health Service Act, as amended, 42 U.S.C. 241 and 42 U.S.C. 243, to (1) conduct, encourage, cooperate with, and assist other appropriate public authorities, scientific institutions, and scientists in the conduct of research, investigations, experiments, demonstrations, and studies relating to the causes, diagnosis, treatment, control, and prevention of physical and mental diseases, and other impairments; and (2) assist States and their political subdivisions in preventing and suppressing communicable diseases and other preventable conditions and in promoting health and well-being.

Function
The Advisory Council for the Elimination of Tuberculosis shall provide advice and recommendations regarding the elimination of tuberculosis to the Secretary; the Assistant Secretary for Health; and the Director, CDC. The Council shall make recommendations regarding policies, strategies, objectives, and priorities; address the development and application of new technologies; and review the extent to which progress has been made toward eliminating tuberculosis.

Structure
The Council shall consist of ten members including the Chair. Members and the Chair shall be selected by the Secretary from authorities knowledgeable in the fields of public health, epidemiology, immunology, infectious diseases, pulmonary disease, pediatrics, tuberculosis, and microbiology. The Council shall also consist of nine nonvoting ex officio members representing: the Agency for Health Care Policy and Research; the Agency for International Development; the Department of Veterans Affairs; the Food and Drug Administration; the Health Resources and Services Administration; the Indian Health Service; the National Institutes of Health; the Office of Minority Health, Office of Public Health and Science; the Substance Abuse and Mental Health Services Administration; and such additional officials of the U.S. Government as the Secretary deems necessary for the Council to effectively carry out its function. The Council shall also include nonvoting liaison representatives from the American College of Chest Physicians, the American Lung Association, the American Medical

Association, the American Thoracic Society, the National Tuberculosis Controllers Association, the Infectious Disease Society of America, and such other nonvoting representatives from organizations with interests in the prevention and control of tuberculosis as the Secretary deems necessary to effectively carry out the function of the Council.

Subcommittees composed entirely of members of the Council may be established from time to time. The Department Committee Management Officer will be notified upon establishment of each subcommittee, and will be provided information on its name, membership, function, and estimated frequency of meetings.

Members shall be invited to serve for overlapping 4-year terms; terms of more than 2 years are contingent upon the renewal of the Council by appropriate action prior to its termination. Members shall serve after the expiration of their terms until their successors have taken office.

Management and support services shall be provided by the Office of the Director, National Center for HIV, STD, and TB Prevention, CDC.

Meetings
Meetings shall be held approximately three times a year at the call of the Chair with the advance approval of a government official, who shall also approve the agenda. A government official shall be present at all meetings.

Meetings shall be open to the public except as determined otherwise by the Secretary or other official to whom the authority has been delegated; notice of all meetings shall be given to the public.

Following are the most recent ACET recommendations (from 1995 to the present):

Essential components of a tuberculosis prevention and control program. *MMWR* 1995;44(No. RR-11):1-16.

Screening for tuberculosis infection in high-risk populations. *MMWR* 1995;44(No. RR-11):19-34.

The role of BCG vaccine in the prevention and control of tuberculosis in the United States. *MMWR* 1996;45(No. RR-4).

Prevention and control of tuberculosis in correctional facilities. *MMWR* 1996;45(No. RR-8).

Development of new vaccines for tuberculosis. *MMWR* 1998;47(No. RR-13).

Graduate Certification Program

An Educational Opportunity for Public Health Professionals

The Graduate Certification Program (GCP) in Public Health was established in response to the need to provide working health professionals the necessary education and development to meet the ever-changing environment of public health. Initially targeted at CDC's public health advisor field staff, the GCP has become a widely-relevant and applicable program that can benefit a large audience of health professionals.

CDC has made a commitment to capacity building, focusing on the infrastructure that sustains and expands the capability of every aspect of public health programs. Changing the way graduate programs in public health are delivered and widening

the scope and approach to allow individuals the flexibility to pursue professional development is a bold step toward building critical human capacity in public health.

About the Program
In April of 1996, CDC sent a Request for Proposals (RFP) to all schools of public health to generate applications for a contract with several schools to provide a unique and specifically designed curriculum. CDC's goal was to work with schools that could blend the beneficial characteristics of on-campus classroom instruction with distance education methodology in order to allow the greatest amount of flexibility and benefit to the learner while minimizing the impact on the individual and the workplace.

The Graduate Certification Program's focus is to use innovative learning resources to deliver a sound public health curriculum to meet the needs of the working health professional. The University of Washington, Emory University, Tulane University, and Johns Hopkins University were selected to develop and carry out the GCP academic curriculum within a four-phase contract.

The Curriculum
The GCP offers a curriculum which, as a complete 12- to 15-month program, is itself substantial and complete but also allows for the option of applying all credits earned to a graduate degree in public health. The curriculum offers basic core competencies such as

- Communication skills
- Teaching skills
- Epidemiology
- General comprehensive knowledge of health care systems

The core areas of study are coupled with specialty academic tracks in public health areas including

- Epidemiology
- Public health policy
- Public health administration and management
- Community based public health issues
- Public health promotion and education
- Management information systems

Students are required to complete a practicum, which provides the link between education and public health practice. In addition, students will develop and expand their knowledge of the various aspects of modern information technology.

The Impact
Upon completion of the GCP, students will demonstrate increased competency in critical thinking skills, quantitative skills, communication skills, and public health practice. The GCP will provide health practitioners an academic foundation in public health principles, methods, concepts, and theories. The field staff focus of the GCP is to enhance the specific public health expertise required to support state and local public health prevention program efforts.

About Eligibility
Participation in the Graduate Certification Program is open to all CDC employees and those with

- A bachelor's degree in any field of study
- Career or career-conditional employment status

If the employee is selected and receives programmatic support for the GCP, he or she must also meet the specific admission criteria of the university in order to participate.

—Reported by Vicky Rayle
Office of the Director, NCHSTP

Field Services Branch Medical Officer Assignments

The mission of the Field Services Branch (FSB) in the Division of Tuberculosis Elimination includes providing medical and programmatic consultation to assist state and local health departments in developing, implementing, and evaluating their activities toward achieving tuberculosis prevention, control, and elimination; evaluating tuberculosis program performance and providing technical assistance to improve program operations; monitoring performance of the tuberculosis cooperative agreements; and analyzing data to assess progress toward national TB objectives.

In working on ways to improve our ability to achieve this mission, FSB has been enhancing the partnership between the medical officers and program consultants in program evaluation activities. To accomplish this, we have added some new medical officer staff and taken on some new and some enhanced activities.

Dr. John Jereb is a pediatrician who started his work in TB control while he was with the Indian Health Service. He came to DTBE as an EIS officer in 1990 and has worked in FSB since 1995. Since January 1998, he has been leading a DTBE work group that is developing the new TB program management reports. The new completion of therapy report has been implemented already, and the reports for contact follow-up and for screening are being fieldtested and revised. These two reports will be implemented by mid-1999. His other projects relate to the complications of INH preventive therapy, especially INH-associated hepatitis.

Dr. Mark Lobato comes to FSB from the Division of HIV/AIDS Prevention, Surveillance Branch. In FSB, Mark is analyzing data from program management reports on contact investigations and completion of preventive therapy. He is working with the Program Consultants to enhance their program evaluation activities. He has proposed several studies to evaluate TB screening and preventive therapy programs in jails and other settings with difficult-to-reach populations, and he plans to work with local programs on improving outcomes from contact investigations. He will also be working with staff from the International Activity on US–Mexico border issues.

Dr. Lisa Cairns is a preventive medicine resident recently assigned to FSB. Dr. Cairns will be working on two projects over the next year. The first is a study examining the factors contributing to delays in completion of TB therapy. This will be done through chart reviews at selected sites across the United States. The second project is to assemble a teaching file of radiographs relevant to TB for use by CDC and non-CDC clinicians wishing to upgrade their skills.

In addition, FSB has been adding to its group of field medical officers. Look for more about them in the next issue of *TB Notes*.

—Reported by Patricia M. Simone, MD
Division of TB Elimination

UPDATE FROM THE LABORATORY

The Complete Genome Sequence of *Mycobacterium tuberculosis*

A milestone in TB research was reached recently with the publication of the complete genome sequence of *M. tuberculosis* H37Rv (Cole ST, Brosch R, Garnier PT et al. Deciphering the biology of *Mycobacterium tuberculosis* from the

complete genome sequence. *Nature* 1998;8:34-50). Sequencing of the TB genome had been advocated since the late 1980s when the technology for rapid sequencing became available. It was felt that because TB is the most important infectious disease worldwide and the organism is rather difficult to work with, *M. tuberculosis* would be a prime candidate for a sequencing project. Although large-scale sequencing using automated DNA sequencers is now common, it is still a challenging and costly undertaking. Sequencing of the H37Rv genome was funded by the Wellcome Trust. A second project underway at The Institute for Genetic Research (TIGR) with funding from NIH will determine the sequence of strain CDC1551, the highly transmissible strain associated with an outbreak in Kentucky/Tennessee (Valway SE, Sanchez MPC, Shinnick TM, et al. An outbreak involving extensive transmission of a virulent strain of *Mycobacterium tuberculosis*. *NEJM* 1998;338:633-639).

In the past 10 years a variety of specific TB genes, such as genes coding for various antigens and genes associated with drug resistance, have been cloned and sequenced. These genes are usually 1,000-3,000 bases. However, the entire TB genome consists of 4.4 million bases. The approach used by Cole and coworkers consisted of inserting large segments of TB DNA (30-100 kilobase pairs each) into cosmid and BAC (bacterial artificial chromosomes) vectors and propagating these in *E. coli*. Using restriction digest mapping procedures, the clones were arranged in an ordered array of overlapping segments representing the entire circular genome. Each clone was sequenced, and the sequences were aligned using computer analysis. Gaps in the sequence were filled by sequencing smaller clones.

The TIGR project has used a shotgun approach. The TB genome was broken into smaller random segments and the clones (over 50,000!) were sequenced. This provides the sequence in both strands with a high level of redundancy, that is, multiple independent sequencing results for each segment. Extensive computer analysis will be required to assemble these overlapping sequences into a complete circular genome. This project is also nearing completion.

Determining the genome sequence is only the first step. The H37Rv sequence was analyzed to identify possible genes coding proteins and stable RNAs (ribosomal RNAs and transfer RNAs), regulatory elements controlling gene expression, and other features such as insertion sequences. This required computer analysis of the sequence to detect open reading frames, that is, large segments that lack stop codons, and the characteristic start codons that appear at the beginning of genes. The sequences of putative genes were then analyzed for similarity at the DNA or protein (amino acid) sequence level to known genes from other organisms. Using these approaches, they have identified about 4,000 genes. Many of these possible genes have been named based on similarity to other genes, although this does not mean that the gene has the same function in *M. tuberculosis*, or even that the gene is functional. Determining the actual function of the genes will require many more years of research.

The genome sequence will provide a wealth of information for researchers. Analysis of the sequence may identify new antigens that may be appropriate for vaccine development, new metabolic pathways that may be targets for novel drugs, and genes or groups of genes that are induced upon infection and may be involved in virulence. The genome sequence will allow researchers to select

specific regions of interest for additional study. With the sequence, it is relatively simple to amplify a particular region of the genome using PCR for the purpose of cloning and genetic analysis. It is also simple to amplify and sequence the gene of interest from a variety of isolates to determine if there are sequence differences that may relate to phenotypic features such as virulence or drug resistance.

In larger-scale studies, the sequence will be used to generate probes for each of the putative genes. These will be used in a microarray format for hybridization assays to detect m-RNA expressed under various conditions such as in vitro growth versus growth in macrophages. This analysis will provide clues to the nature of specific genes expressed during the infection process. Comparison of the H37Rv sequence with the sequence of CDC1551 may reveal differences that are associated with the increased virulence of CDC1551, and insight into evolution of the species.

—Reported by Jack Crawford, PhD
Div of AIDS, STD, and TB Laboratory Research

UPDATES FROM THE RESEARCH AND EVALUATION BRANCH

Report on Short-Course Preventive Therapy Meeting

On September 14-15, CDC joined with the American Thoracic Society to hold a meeting in Atlanta on TB screening and preventive therapy. The objective of the meeting was to review recent information from short-course preventive therapy trials and develop new recommendations on both screening and provision of preventive therapy. The meeting participants addressed three areas: the recent efficacy studies, operational and programmatic issues in screening and provision of preventive therapy, and cost-effectiveness/ risk-benefit studies.

With the input of meeting participants, new recommendations for the use of the short-course regimen of daily rifampin and pyrazinamide for 2 months (2RZ) for HIV-infected persons were included in the *MMWR Recommendations and Reports*, Prevention and treatment of tuberculosis among patients infected with human immunodeficiency virus: principles of therapy and revised recommendations, *MMWR* 1998;47(No. RR-20). The 2RZ regimen is recommended as an alternative to a 12-month regimen of isoniazid for the prevention of TB in HIV-infected persons with positive tuberculin skin test reactions. This recommendation is based on the results of several randomized, controlled clinical trials in HIV-infected persons.

In the ATS/CDC statement expected to be issued next year, the 2RZ regimen will also be recommended for HIV-uninfected persons for whom preventive therapy is indicated. This recommendation will note that a comparative trial of the 2RZ regimen in HIV-negative persons has not been conducted and that additional data will be needed on acceptability and toxicity to determine if it is a cost-effective alternative to longer courses of isoniazid. Until the new guidelines are issued, programs wishing to use this regimen for HIV-negative persons may do so, following the same guidelines for its use in HIV-positive persons. This regimen may be especially useful in settings where provision of longer courses of preventive therapy has not been feasible (e.g., jails). DTBE is planning to collect information on completion of preventive therapy from selected programs using the short-course regimen.

—Reported by Rick O'Brien, MD
Division of TB Elimination

Report of the Symposium on Tuberculosis Vaccine Development and Evaluation

A conference was held August 26-28, 1998, in San Francisco to explore the development of a new vaccine for TB. It was co-chaired by Drs. Rob Breiman (US National Vaccine Program Office) and Ann Ginsberg (US National Institute for Allergy and Infectious Disease). The meeting mixed an overview of the science with excellent abstracts and organizational, programmatic, and ethical issues of vaccine development and evaluation.

The presentations underscored that tuberculosis is an enormous global problem—$700 million is spent annually in the United States, a country with a relatively low prevalence. Decision analysis modeling shows that an effective vaccine could have a great impact on world tuberculosis. Most attendees felt that tuberculosis elimination would be nearly impossible without one. An ideal vaccine should have high efficacy and acceptability, low cost and toxicity, and should be easy to produce and deliver. It could be in the form of live or killed bacteria, recombinant subunits, or naked DNA. It could be delivered intramuscularly, subcutaneously, or mucosally. It could be given to uninfected individuals to prevent infection or to infected individuals to prevent disease. The latter would require smaller numbers of study patients for testing and would be extremely useful but would probably be more complicated to develop, since we currently do not fully understand the progression from tuberculous infection to tuberculous disease. The vaccine could be for high-risk individuals (such as close contacts) or for everyone.

A prerequisite for the development of a vaccine is an accessible marker. A marker is a serologic or other readily measurable parameter that correlates with vaccine protection. The efficacy of every FDA-approved vaccine can be measured by serum immunoglobulin-G levels, except the current tuberculosis vaccine, BCG. Possible serum markers include interferon gamma, tumor necrosis factor alpha, interleukin-10, and transforming growth factor beta, which can be tracked in human tuberculosis but are nonspecific. CD4 and CD8 cells are both necessary for protection against tuberculosis, but are also too nonspecific to be valuable markers. Although measuring individual mycobacterial antigens has not been helpful, following levels of a combination of them might be. Animal models are important for developing vaccines and can provide evidence for their safety, but vaccines have been developed without them. The FDA approved vaccines against pertussis, meningococcus, and Haemophilus influenzae type B without animal testing. Animal systems do not predict human vaccine efficacy.

Conference participants agreed that BCG is effective in cellular and animal models and decreases tuberculous meningitis in children. However, BCG's ability to attenuate certain forms of tuberculosis plays no significant role in reducing the prevalence of tuberculosis worldwide. All attendees felt that a better vaccine is needed. Finding a better a vaccine practically means finding a better antigen or group of antigens to stimulate human immunity. To enhance the immunogenicity and duration of vaccine effectiveness, there are more than a hundred different chemical or biological additives (adjuvants) that can be used. These are likely to be necessary, but finding the best agent, amount, and means of interacting with the antigen has not been worked out. The unraveling of the tuberculosis genome, with its 3,924 genes, is a leap forward to finding the best antigen to be tested. Many genes have already

been cloned and tested; most decrease the virulence of *M. tuberculosis* but at least two increase it. The use of luciferase markers in mice is a new shortcut that has sped up testing. Researchers have found about 100 candidates for vaccines. Several lessons can be learned from animal vaccines and other human vaccines. Naked DNA vaccines would probably be the cheapest, but an expensive vaccine may still be a good value if it is effective.

Representatives from 13 pharmaceutical companies addressed economic and developmental issues. They emphasized the need for a market for such a vaccine and more basic research before they could start development. Representatives from the US government (USAID, NIH, CDC, and NIAID) emphasized that consensus from the academic community and interest from the public would improve the likelihood of the development being funded. The ethics of conducting trials in developing countries and the problems of bringing a vaccine to market are substantial but surmountable.

The participants agreed on a blueprint of what to do to bring the vaccine to fruition: Academia needs to improve our understanding of the pathophysiology of tuberculosis and to identify vaccine candidates and methods to evaluate them. Government entities need to support basic research and facilitate clinical testing. Nongovernmental organizations need to advocate for the vaccine, present a forum for scientific discussion, and facilitate clinical trials. Industry needs to develop, test, get approval for, and market the vaccine.

The proceedings will be published as a supplement to a major medical journal.

—Reported by Dean Schraufnagel, MD
University of Illinois at Chicago Medical Center

TB Trials Consortium Recompetition in Early 1999

Recompetition for membership in CDC's TB Trials Consortium (TBTC) will take place in early calendar year 1999. The TBTC is an investigator-driven consortium of clinical investigators funded by and collaborating with CDC to conduct clinical trials in TB treatment, diagnosis, and prevention.

The consortium was established in 1993-1994 and was responsible for the conduct of USPHS Study 22, a trial of once-weekly isoniazid and rifapentine in the continuation phase of therapy for pulmonary TB. That trial concluded enrollment in autumn1998, and will conclude follow-up in early 2001.

In 1997-1998 CDC worked with the USPHS Study 22 investigators to develop an infrastructure that would engage more fully the capacities of the clinical sites. Formal by-laws have been adopted. Several working committees composed of CDC staff and selected Consortium investigators have been established; one oversees the scientific program of research, a second assures the quality of ongoing study performance, and a third serves as the executive arm of the Consortium. This structure is modeled on the NIAID-supported Clinical Program for Community Research in AIDS (CPCRA).

The current infrastructure of the TB Trials Consortium includes

- A network in the US and Canada of 26 clinical sites. Eleven sites are health departments or academic medical centers. Fifteen are Veterans Administration Medical Centers or affiliates. The principal investigators at these sites are recognized nationally and internationally as experts in TB treatment and prevention
- Experienced nurse clinicians and outreach workers at each of the 26

funded sites
- A communications infrastructure which includes semi-annual meetings, regular and special telephone conference calls, and periodic e-mail updates
- Relationships with local TB control programs at each site, which facilitate the recruitment and management of trial patients
- An expert Data & Safety Monitoring Board, which convenes semi-annually to review the current Rifapentine Clinical Trial
- Coordination with and between the CDC IRB and local IRBs at the 26 clinical sites
- A Data and Coordinating Center at CDC (about 6 full-time staff)
- Cooperative relationships with key manufacturers of TB drugs

The Consortium has required both time and substantial financial resources to establish and support, and is now functioning efficiently. Currently new drugs and regimens for both TB treatment and prevention, new diagnostic tests, and new vaccine candidates are becoming available for clinical investigation. Concurrently, the challenges posed by the goal of TB elimination are increasing, as rates of drug resistance increase and as the costs associated with assuring high rates of adherence rise. The consortium now provides a unique and important resource for further clinical studies.

Investigators in the TBTC are currently following patients in USPHS Study 22, and enrolling patients in two substudies, one intended to provide a bank of reference sera from TB patients and another to study the pharmacokinetics of rifapentine in patients participating in Study 22. Plans are underway to initiate the following new studies in the next 12 months:

Study 23: Single arm clinical trial to evaluate the safety and efficacy of rifabutin-containing short-course therapy for HIV-infected TB patients receiving HIV protease inhibitors. Aims to enroll 200 patients over 2 years, with 2-year follow-up. Protocol in IRB review. Expected start date: winter 1998.

Study 23a: Substudy to evaluate drug pharmacokinetics of rifabutin and protease inhibitors. Also in IRB review.

Study 24: A single-arm study of largely intermittent, short-course therapy for patients with INH-resistant TB or INH intolerance. Aims to enroll 200 patients over 2 years with 2 years of follow-up. Completed protocol approved by TBTC Steering Committee in October 1998. Enrollment expected to begin early 1999, following IRB review.

NAA Substudy: A substudy of nucleic acid amplification tests associated with studies 23 and 24.

Study 25: A Phase I/II dose escalation study of rifapentine using same design as Study 22, with patients completing 2-month standard induction then randomized to 600, 900, and 1200 mg of once weekly rifapentine / isoniazid. Expected to demonstrate safety and tolerability of higher doses of rifapentine, which may be needed to improve efficacy, prevent emergence of rifampin resistance in HIV-infected patients and permit use of once-weekly treatment earlier in initial phase. Protocol likely to be submitted to Steering Committee for approval in December 1998. Enrollment of 150 patients to begin as soon as possible after IRB approval obtained.

Presently, CDC is supporting the TBTC through 11 individual contracts and through

a Memorandum of Agreement with the Veterans Administration (administered by Dr. Fred Gordin in Washington, DC). A formal and open external recompetition for membership in the TBTC is planned for early 1999. Some international sites may be included in the Consortium when membership is recompeted in early 1999. The recompetition process will be analogous to that used for NIAID's AIDS clinical trials consortia (ACTG, CPCRA). News of the announcement will be published in the *Federal Register*, and will be sent to TB programs and other potentially interested applicants. For further information, contact the Research and Evaluation Branch, DTBE, at (404) 639-8123.

—Reported by Andrew Vernon, MD, MHS
Division of TB Elimination

REB's Study on Outcomes of TB Contact Investigations

The Prevention Effectiveness Section of the Research and Evaluation Branch in DTBE is currently conducting a study entitled “Approaches and Barriers to Successful Outcomes of Tuberculosis Contact Investigations in US Public Health Clinics.”

The purpose of this study is to (1) analyze the practice and outcomes of contact investigation in a wide range of TB program settings, (2) identify characteristics that determine successful contact investigations, and (3) document and analyze the costs and resources associated with contact investigations. Two types of data are being collected: descriptive data on the organizational structure, policies, practices, and costs of contact investigations at the program site, and clinic record abstractions from a sample of pulmonary smear-positive TB cases and all their contacts from July 1996 through June 1997. This research will provide essential data to the sites to facilitate evaluation of contact investigations so that they can be conducted more effectively and efficiently in the future. In DTBE's analysis of the data from all 11 sites, we will examine the hypothesis that characteristics of site-specific programs, patients, and contacts influence the rate of completion of preventive therapy among contacts of infectious TB patients.

Eleven TB program sites were selected for study participation based on completion of preventive therapy statistics gathered from the TB program management reports. The sites selected for participation were Atlanta, Chicago, Houston, Los Angeles, Memphis, Newark, New York City, San Diego, San Francisco, San Jose, and Seattle. DTBE staff, including Robin Shrestha-Kuwahara, Suzanne Marks, Cristy Nguyen, Noreen Qualls, Zach Taylor, and Maureen Wilce are visiting the sites to collect the data. Begun in June 1998, data have already been collected in Atlanta, Los Angeles, San Francisco, San Jose, and San Diego. Clinic records of 406 cases along with their 6,116 contacts, some of whom were from large workplace settings, have been reviewed as of October 13. Data collection of the remaining 686 cases is scheduled to be finalized by January 1999, with analysis taking place January through March 1999. REB would like to thank the DTBE program managers who helped arrange the site visits and the program staff at the selected sites, especially those who pulled the charts for review and those who helped enter data. Please address any study questions to Suzanne Marks, principal investigator, or Zach Taylor, coprincipal investigator, (404) 639-8123.

—Reported by Suzanne Marks, MPH, MA
Division of TB Elimination

INTERNATIONAL NOTES

Outbreak of Multidrug-Resistant TB in Buenaventura, Colombia

In May 1997, the Secretary of Health (Valle de Cauca) solicited and financed the assistance of el Centro Internacional de Entrenamiento e Investigaciones Medicas (CIDEIM) in the investigation in Buenaventura of 24 cases of TB that had been clinically unresponsive to first-line TB medications for several years. Preliminary drug susceptibility testing revealed that many of these patients had multidrug-resistant strains of *Mycobacterium tuberculosis* (MDR TB). In October 1997, epidemiologic assistance was requested from DTBE.

The investigation was performed from March 2-27, 1998. The objectives for the investigation included the following: (1) To investigate programmatic and patient risk factors for drug resistance; (2) To identify problems with current case management and suggest alternatives for the appropriate treatment of TB cases; and (3) To assist the National Secretary of Health in reinstating the TB prevention and control program in Buenaventura.

Colombia is divided into 32 geographical areas or departments. The department of the Valle de Cauca has 42 municipalities, the largest being Buenaventura. Buenaventura covers the entire Pacific Cost of the Valle del Cauca, an area of 6078 square kilometers. The municipality of Buenaventura is currently economically stressed, as reflected by a municipal deficit of $35 million, unemployment greater than 20%, and 46% of the 260,000 inhabitants with their basic needs unmet.

The TB program of Buenaventura was centralized and managed by the central hospital until 1996, when the program was decentralized as part of the national health sector reform. TB patients who were in the program at that time were distributed to nine separate local health posts (based on geographic proximity to the patient's residence), and the TB program was transferred to the national Secretary of Health.

In May 1997, antituberculosis drug susceptibility testing was performed by CIDEIM on 18 cultures obtained from the 24 TB patients unresponsive to treatment. The testing was done for isoniazid, rifampin, ethambutol, pyrazinamide, streptomycin, thioacetazone, ciprofloxacin, and amikacin. The results of this testing are presented below:

- 12/18 (67%) multidrug resistant (resistant to at least INH and RIF)
- 15/18 (83%) resistant to isoniazid (INH)

To evaluate programmatic and patient risk factors for multidrug resistance, we interviewed the original group of 24 patients (including family members of those deceased; n=4) and patients with TB who had similar characteristics of clinical failure as those in the original group (n=28), but who were as yet unidentified as having drug resistance because cultures were pending or had not been performed. We performed patient interviews, and chart and treatment card review. Further, we obtained clinical specimens for cultures, susceptibility testing, and HIV testing. Results from the initial 24 patients are presented below.

In 21/24 interviews with the original patients or adult family members of those deceased (n=4), we found the majority were aged between 15 and 44 years (median = 31 years), 20/24 (83%) were males, 10/21 (48%) were unemployed, and 10/21 (48%) had not finished primary school. The median time spent living in Buenaventura before the current diagnosis was 22.5

years, and the median total time living in Buenaventura was 27 years. The average time with symptoms prior to diagnosis was 18 weeks (range: 1-260 weeks).

Beginning with the initial episode, we found a variety of errors in both the clinical management and supervision of each patient's TB. These errors may have lead to the high prevalence of multidrug resistance found among these individuals.

Specifically, in an analysis of the clinical management of the patients with resistance, we found

- Only two thirds of the patients (16/24) had been prescribed DOTS correctly in their episode;
- None (0/16) had been prescribed the correct retreatment regimen after a failing DOTS treatment;
- The median elapsed time since first TB diagnosis was 4 years;
- 100% of the patients had a least a 2-year history of TB;
- Most (21/24) of the patients had a least two distinct courses of treatment for TB;
- 22/24 (92%) had TB medications improperly added to and subtracted from their treatment regimens;
- 15/24 (63%) had the addition of a single drug to a failing regimen;
- Only 72% (13/18) of individuals who had abandoned treatment for 1 month or more had a smear done upon their return to treatment;
- 19/24 (79%) of the patients had abandoned treatment at least one time.

To evaluate risk factors for multidrug resistance associated with the TB program, we interviewed personnel (MDs, RNs, and health promoters) from nine local health posts, the central hospital, three clinical laboratories, and the drug warehouse. Data collection methods included visits, open-ended group interviews, and review of all epidemiological information on TB from 1994 through 1997.

In general, there was an evident lack of coordination and effective communication between the personnel at the local health posts. There is a wide gap between theoretical knowledge and practice in case finding, surveillance, management, and treatment of patients with TB. There is no formal mechanism for overall surveillance, and active case finding for TB patients through activities as contact tracing is almost nonexistent. If patients with respiratory symptoms suggestive of TB go to the health center, they receive some type of verbal education about the disease. At that time, they are also instructed on the collection of a sputum sample. Nonetheless, there is no active registry at the health posts to record names of those with respiratory symptoms or dates that samples (sputum) are requested or received.

Sputum samples are usually obtained at home. Thus, results of smears at the health centers rely on accurate sample collection by the patient. Also, the patient is responsible for transporting his or her sputum sample to the laboratory, collecting laboratory results, and providing these results back to the local health posts. When a patient returns with a positive TB smear to the health centers/posts, he or she is then usually referred to the physician at the health post for medical evaluation and treatment, and a contact investigation. As part of the contact investigation, personnel from the health centers/posts visit the patient's home to evaluate symptoms and provide sputum collection containers to contacts with respiratory symptoms suggestive of TB.

Conclusions:
Acquired multidrug resistance in Buenaventura is associated with a large number of errors occurring in both the

clinical management of the patient and the TB program. Without an immediate intervention in both the management of the individuals with current TB and the overall program, the current patients will likely die, and many new MDR patients will be produced.

Recommendations (The following paragraph is from the editorial note in the article Acquired multidrug-resistant tuberculosis–Buenaventura, Colombia, 1998. *MMWR* 1998;47:759-761.)

The findings from this investigation have lead to improvements in TB control efforts in Buenaventura in the context of a decentralized health system. Structural changes in the overall TB program have been implemented, including the designation of personnel to direct the program and the installation of mechanisms to monitor and evaluate TB services. Training for physicians and health care workers in the management of TB and MDR TB has been initiated. To improve patient adherence to TB treatment, the use of DOT was initiated for both MDR TB patients and other patients. Further, new treatment regimens were designed for each patient, based on drug susceptibility testing performed by CIDEIM.

Additional programmatic recommendations included training in the processing and utilization of TB smears as a diagnostic tool, reorganization of the supply and distribution of TB medications, health education campaigns directed at both TB high-risk groups and the general population, and further improvements in laboratory capabilities. Longer term recommendations included the creation of an infection control program in local health facilities and the creation of at least one specialized chest clinic.

—Reported by Edwin M. Rodriguez, MHA
New York State TB Control Program

NEWS BRIEFS

The APHA annual meeting will be held November 15-19, 1998, in Washington, DC. The APHA Annual Meeting is the oldest and largest gathering of public health professionals in the world. The Washington, DC, meeting is expected to attract more than 13,000 national and international physicians, administrators, educators, epidemiologists, nurses and related health specialists. Additional information and the Advance Registration Form can also be downloaded directly from the APHA website at http://www.apha.org/convention/index.htm

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The Association of State and Territorial Public Health Laboratory Directors (ASTPHLD) has changed its name to the Association of Public Health Laboratories (APHL).

TRAINING AND EDUCATIONAL MATERIALS

New Training Video on Assessing Engineering Controls for TB Now Available

The Institutional Consultation Services (ICS) of the Francis J. Curry National TB Center (CNTC) has developed a new educational and training video, *How You Can Assess Engineering Controls for TB in Your Healthcare Facility*. Subtitled, *You Don't Need a Weatherman to Know Which Way the Wind Blows*, this video provides an introduction to basic techniques that can be used to evaluate engineering controls by all staff who are responsible for the evaluation and maintenance of TB controls in the health care setting. These staff may include infection control coordinators, safety officers, employee health practitioners, and facility engineers. This 25-minute video is organized in a chapter format and covers the basics of ten topics:

(1) isolation rooms, (2) ventilation, (3) exhaust air, (4) HEPA filter units, (5) negative pressure verification, (6) negative pressure - how much? (7) room pressure monitors, (8) room clearance time, (9) sputum induction, and (10) waiting rooms. Included with the video is a viewer's guide that contains the main points from the video, engineering control recommendations, and forms and tables that can be put to immediate use in your facility. This video can be viewed from the CNTC Web site:
http://www.nationaltbcenter.edu
Or you can request an order form for your copy of the video (at no charge, while supplies last) by contacting:
Distance Learning Projects
Francis J. Curry National TB Center
3180 - 18th Street, Suite 101
San Francisco, CA 94110-2028
Fax (415) 502-7561

—Reported by Kay Wallis
Francis J. Curry National TB Center

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DTBE's educational materials can now be ordered on the Internet. You can access the system via DTBE's Web site at http://www.cdc.gov/nchstp/tb/.

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Brown Bag Opera's TB Video

TB or Not TB, a funny, touching, and dynamic drama on the history, treatment, and prevention of TB, is now on video. It can reach people in clinics, hospitals, and schools, and is very effective for those with low reading skills. An easy-to-read TB education booklet, complete with cartoon characters, is included and may be copied.

The show is narrated by the villain, the TB bacillus itself, and includes seven different characters, opera, and and a rap song. For review of the facts, it concludes with an interactive game show.

TB or Not TB teaches about the history, treatment, and prevention of TB and the social issues surrounding this still-contemporary disease. It also stresses the importance of taking medicines consistently. *TB or Not TB* demonstrates that TB can be treated and cured.

Noted for its educational effectiveness and praised by doctors, nurses, and health care providers from around the world, Brown Bag Opera's *TB or Not TB* has been featured on "CNN World Medical News" and "National Public Radio" and in the *Wall Street Journal.*

Following are comments on the video from two distinguished TB control experts:

> "Your program is dramatic, compelling, meaningful, and thought-provoking. It is a perfect vehicle for education about the scourge of TB." —Lee B. Reichman, MD
>
> "*TB or Not TB* accesses a hard-to-reach population in a way that ordinary public health warnings and education do not. The characters each have a human story to tell and cross historical, socioeconomic, and cultural barriers. The critical public health message is that, unlike AIDS, TB is a threat that is both treatable and preventable if only appropriate testing, evaluation, and therapy are applied. Everyone can relate to someone in this drama." —Edward A. Nardell, MD

Each video, booklet included, is $35 complete. Please make checks payable to Brown Bag Opera and mail to

Brown Bag Opera, Inc.
39 Mason Rd.
Newton, MA 02459
Tel: (617) 332-6635
Fax: (617) 332-6639
E-mail: bbopera@aol.com

—Reported by Susan Stone
Executive Director, Brown Bag Opera, Inc.

TB Training and Education Materials from North Carolina

- TB Test Card (yellow business-size card in English and Spanish). The card is given to persons who seek TB services. The agency may stamp its address and phone/fax number on the front of the card. This is useful information for the patient and health care providers. The back of the card provides documentation of TB status and treatment received to be shared with other health care providers.
- How to Collect a Sputum Sample (English and Spanish, 4th grade reading level) The pamphlets describe how to successfully give a sputum sample. The pamphlets provide photographs of people implementing activities.
- We're Working Together to Make NC TB Free! A Coloring and Activity Book (English and Spanish). A story written for children who have TB or who may have someone in their family who has TB. It emphasizes how the public health department is an excellent resource for TB control activities and dispels TB myths.
- Pare TB (the Spanish version of CDC's "Stop TB" flyer). This pictorial poster was developed to educate persons with or at risk for TB. It displays the transmission of TB, progression from infection to disease, treatment, and prevention.
- TB Information Sheet. The sheet describes TB information and statistics concerning the World, the United States, and North Carolina. This sheet can be used as a handout and/or overhead.
- TB Information Card. Provides a pocket reference for health care providers regarding 1) recommended treatment regimens for TB disease, 2) health department resources for the management, surveillance, and control of TB, and 3) how to accurately give, read, and interpret the tuberculin skin test. The folded card may be placed in a shirt or jacket pocket and is intended for physicians and other health care providers who are actively involved in the diagnosis and/or treatment of TB.
- NC TB Control Branch. This handout lists the state TB staff and describes the partnerships the branch has established in "Making NC TB-Free."
- Stop TB Now (exhibit layout targets general public). The exhibit describes how TB is spread, TB signs, and how TB can be stopped. The board and/or graphics can be loaned to an agency to use at health fairs or other community events.
- Make NC TB-Free (exhibit layout targets health care providers). The exhibit explains TB treatment, prevention, and education activities and showcases the NC TB Control Branch logo. The exhibit describes public and private partnerships to "Make NC TB-Free."
- TB in the Hood (11-minute video for health care providers, 1996). The video takes a tour of the North Carolina Microbiology Lab located in Raleigh. It explains what happens to a lab specimen once received at the lab. The tape addresses specific steps that must be followed when preparing and processing a specimen.
- 1995 North Carolina TB Policy Manual. The TB Control Branch is currently revising the manual.
- Preventive Therapy Video (expected in 1999). The Mecklenburg County Public Health Department along with NC TB Control Branch will produce a preventive therapy video that mirrors the NC Preventive Therapy Booklet given to patients. The video will be in the following languages: English, Spanish, Russian, Vietnamese,

Serbo/Croatian, Russian, and Somalian.
- A resource for professionals who wish to address Hispanic needs is the booklet, "Developing, Translating, and Reviewing Spanish Materials." As committee members of the NC Bilingual Resource Group, our group developed these recommendations for local health departments. This booklet serves as a valuable guide to health and human service agencies.

This year I plan to develop a library of TB foreign language materials. As many of you know, this task will be a work in progress. Identifying or developing and producing quality translations and identifying quality translators are challenges at state and local levels.

—Reported by Mary Glyn Alligood, M.A. Ed.
NC TB Control Branch

Guidelines for Treatment and Control of TB Available from California Department of Health Services and California TB Controllers Association

The California Department of Health Services (CDHS), together with the California Tuberculosis Controllers Association (CTCA), has published *Joint Guidelines for Tuberculosis Treatment and Control in California*. These guidelines adapt national recommendations (ATS, CDC) for practical implementation by health departments and other partners in the TB control effort, such as private providers and laboratories. While developed specifically to address the California TB epidemic, these guidelines could enhance TB control efforts throughout the United States.

The “Guidelines for Reporting Tuberculosis Suspects and Cases in California” lists examples of suspect TB cases that must be reported, including patients
- started on multidrug therapy for clinical suspicion of active TB
- in whom a sputum smear is positive for acid fast bacilli
- who have HIV infection residing in a congregate setting, and have a new finding on chest x-ray consistent with active TB.

The “Guidelines for Oversight of Tuberculosis Care Provided Outside the Local Health Department Tuberculosis Program” define the changing roles and responsibilities for TB controllers working with private providers and managed care.

The “Guidelines for the Placement or Return of Tuberculosis Patients into High Risk Housing, Work, Correctional or In-Patient Settings” include an operational definition for when a patient is no longer infectious.

The “Guidelines for Mycobacteriology Services in California” provides a “Standard of Care” checklist for clinicians to select/evaluate their TB lab.

The “Tuberculosis Screening Guidelines for Drug Treatment Programs” offer practical protocols for health departments and substance abuse treatment providers.

Other guidelines provide information on
- Building the core components of a case management program
- Developing a DOT program
- Ensuring continuity of care between health jurisdictions
- Coordinating tuberculosis prevention and control between state prisons and health departments (*including forms for reporting or transferring correctional TB cases or suspects*)

The CDHS/CTCA Joint Guidelines binder is available for $35, which includes periodic updates, through the California

Tuberculosis Controllers Association, 2151 Berkeley Way, Room 608, Berkeley, CA 94704; (510) 883-6077. You may also access the guidelines from the CTCA website at www.ctca.org.

NOTE: Guidelines on Contact Investigation are under development, including user-friendly tools for defining a likely period of infectiousness, protecting index case confidentiality, as well as setting priorities for contact investigation via a scoring system. Look for them in early 1999. Guidelines for Civil Detention of Persistently Nonadherent TB Patients and *Guidelines for Follow-up and Assessment of Persons with class B1/B2 Tuberculosis* should be available in 1999.

—Reported by Sarah E. Royce, MD, MPH
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and Barbara Cole, RN, PHN, MSN
President, California TB Controllers Association

NEW CDC PUBLICATIONS

CDC. Acquired multidrug-resistant tuberculosis — Buenaventura, Colombia, 1998. *MMWR* 1998;47(No. 36).

CDC. Development of new vaccines for tuberculosis: recommendations of the Advisory Council for the Elimination of Tuberculosis (ACET). *MMWR* 1998;47(No. RR-13).

CDC. Recommendations for prevention and control of tuberculosis among foreign-born persons - report of the Working Group on Tuberculosis Among Foreign-Born Persons. *MMWR* 1998;47(No. RR -16).

CDC. Prevention and treatment of tuberculosis among patients infected with human immunodeficiency virus: principles of therapy and revised recommendations. *MMWR* 1998;47(No. RR-20).

CDC. Notice to readers: Use of short-course tuberculosis preventive therapy regimens in HIV-seronegative persons. *MMWR* 1998:47(No. RR-20).

CDC. *Reported Tuberculosis in the United States, 1997.* July 1998.

CDC. Tuberculosis morbidity — United States, 1997. *MMWR* 1998;47:253-257.

Horsburgh CR. Editorial: What it takes to control tuberculosis. *Am J Public Health* 1998;88:1015-16.

Lobato MN, Loeffler AM, Furst K, Cole B, Hopewell PC. Detection of *Mycobacterium tuberculosis* in gastric aspirates collected from children: hospitalization is not necessary. *Pediatrics* 1998;102:no. 4.

Maetz HM, Walton W, Smith M, Lincoln R, Galvin G, Tryon C, Hayden C, McMacken M, Ring K, Potts L, Edmondson J. "A satellite primer on tuberculosis: a collaboration in distance education." *J Pub Hlth Mgmt Prac* 1998;4(5):46-55.

Miller B, Rosenbaum S, Stange PV, Solomon SL, Castro KG. Tuberculosis control in a changing health care system: model contract specifications for managed care organizations. *Clin Infect Dis* 1998; 27:677-86.

Munsiff S, Driver C. Letter to the editor: Drug-susceptible tuberculosis. *JID* 1998; 177(April):1138.

Nivin B, Fujiwara PI, Hannifin J, Kreiswirth BN. Cross-contamination with *Mycobacterium tuberculosis*: an epidemiological and laboratory investigation. *Infect Control Hosp Epidemiol* 1998;19:500-3.

Nivin B, Nicholas P, Gayer M, Frieden TR, Fujiwara PI. A continuing outbreak of

multidrug-resistant tuberculosis, with transmission in a hospital nursery. *Clin Infect Dis* 1998;26:303-7.

Palmer CS, Miller B, Halpern MT, Geiter LJ. A model of the cost-effectiveness of directly observed therapy for treatment of tuberculosis. *J Public Health Management Practice* 1998;4(3):1-13.

Ridzon R, Whitney CG, McKenna MT, Taylor JP, Ashkar SH, Nitta AT, Harvey SM, Valway S, Woodley C, Cooksey R, Onorato IM. Risk factors for rifampin mono-resistant tuberculosis. *Am J Respir Crit Care Med* 1998;157:1881-84.

Washko R, Robinson E, Fehrs LJ, Frieden TR. Tuberculosis transmission in a high school choir. *J School Health* 1998;68: 256-59.

Washko RM, Hoefer H, Kiehn TE, Armstrong D, Dorsinville G, Frieden TR. *Mycobacterium tuberculosis* infection in a green-winged macaw (*Ara chloroptera*): report with public health implications. *J Clin Microbiol* 1998(April):1101-2.

PERSONNEL NOTES

Peter Cegielski, MD, MPH, has joined the staff of the International Activity. Peter received his medical degree in 1984 from the University of California (San Diego) School of Medicine and completed an internship in primary care internal medicine at the University of Vermont Medical Center Hospital in 1985. He finished a residency in internal medicine in 1987 and a fellowship in infectious diseases and international health in 1990, both at the Duke University Medical Center. In 1995 he received a masters degree in public health from the University of North Carolina (Chapel Hill) School of Public Health. Before coming to the division, Peter was employed as Assistant Scientist in the Department of Epidemiology at the Johns Hopkins University School of Hygiene and Public Health. He simultaneously served as a Johns Hopkins University field director at the Research Institute for Health Sciences of Chiang Mai University in Thailand. Some of his other prior positions included Assistant Professor of Medicine and Director of TB Services, Department of Medicine, University of Texas Health Center; Chief of Medical Services and Research, Center for Pulmonary Infectious Disease Control, University of Texas Health Center; Assistant Professor of Medicine, Division of Infectious Diseases and International Health, Department of Health, Duke University Medical Center; Associate, Division of Infectious Diseases and International Health, Department of Medicine, Duke University Medical Center; and lecturer and consultant physician, Department of Medicine, Muhimbili Medical Center, University of Dar es Salaam, Tanzania. Peter is fluent in Polish, Swahili, and Spanish.

Chris Hayden is retiring from DTBE in January after a 33-year career with CDC. Chris graduated from Gettysburg College with a Bachelor of Arts in 1965 and in the same year began his career with CDC as a Public Health Advisor assigned to the Venereal Disease Control program in New York City. From 1968-1983, he had 3 field assignments with CDC's Division of Tuberculosis Control working with the health department TB programs in Pennsylvania, New York State, and Los Angeles County. He then came to CDC headquarters in Atlanta with the TB Division and served for 3 years as a Program Consultant for 12 State and major city health department TB programs, 3 years as the Deputy Chief of the Surveillance and Epidemiologic Investigations Branch, and 7 years as the Chief of the Program Support Section. In 1996, he was named Chief for the newly formed Communications and

Education Branch which is responsible for communications, training, education, and information dissemination activities of the Division of TB Elimination. One would expect an individual with such an impressive curriculum vitae to be a learned, serious, and articulate man, and so he is. He is a quiet and witty man; however, he has been known to break up staff meetings by taking on the demeanor of a soulful, sensitive poet and reciting "Jabberwocky" with an almost straight face. His prowess with the guitar is legendary; when other DTBE staff have retired or taken other positions, Chris has labored on his personal time for hours, if not days, over the composition of meaningful and heartwarming lyrics about the person, and then compelled the whole division to sing the lyrics to the tune of "The Mexican Drinking Song," the refrain of which always starts "Ai-yai-yai-yai..." Mr. Hayden is going to be missed.

Mike Iademarco, MD, is new to the International Activity of DTBE. Mike received his medical degree in 1986 from the University of Virginia School of Medicine and in 1989 completed an internal medicine residency at Temple University Hospital. From 1989 to 1990, Mike was the chief internal medicine resident at Temple University Hospital. From 1990 to 1993 he was a pulmonary medicine fellow, and from 1991 to 1996 was a postdoctoral fellow, both at Washington University. He received a master's degree in public health this year from the St. Louis University School of Public Health. He most recently held joint appointments as Assistant Professor of Medicine in the Division of Pulmonary & Critical Care Medicine and Assistant Professor in the Department of Cell Biology and Physiology at the Washington University School of Medicine in Missouri. Other positions have included instructor of medicine, Division of Pulmonary & Critical Care Medicine, Washington University School of Medicine, and instructor of medicine, Temple University School of Medicine. Mike's language skills include Italian and French.

Scott Jones is relocating to DTBE headquarters as the newest program consultant in the Field Services Branch. He will be assigned to Field Operations Section 2. Scott came to work for CDC in 1988 as a public health associate in the Division of Sexually Transmitted Disease Prevention, assigned to the Chicago Department of Health. He was transferred to New Orleans in 1990 and worked there as a disease intervention specialist. Following a brief tour of duty with the National Immunization Program in Austin, Texas, he was selected in 1992 by DTBE for a public health advisor position in South Carolina. In 1993, DTBE selected Scott for a position assigned to the Kentucky Department for Health Services. There he provided advice and assistance to the state TB program manager in the day-to-day operations of the program. He had major responsibilities for collection and analysis of data for routine surveillance as well as for disease outbreaks. Scott gained valuable experience in the preparation of assistance applications and program management reports. In 1996, DTBE selected Scott for the vacant public health advisor position in the TB program of the city of New Orleans. There he provided advice and assistance for the management of the city TB program. In November 1996, Scott was selected for the open senior PHA position in the state TB program, also centered in New Orleans. In that capacity Scott served as the program director and managed the activities of an extensive state staff, both centrally located and in the field. He has had direct responsibility for program planning, implementation, and evaluation, and for the administrative aspects of operations. Because of Scott's varied experience, sound technical and program

knowledge, and exceptional interpersonal skill, he will be a welcome addition to our complement of consultants. Scott's report date is November 8, 1998.

Dianne Meeks has retired from DTBE. After nearly 14 years with CDC's Division of TB Elimination (DTBE), Dianne has elected to resign from CDC, effective September 26th, to care for her granddaughter. Dianne first came to DTBE in 1984 as a secretary in what was then the Clinical Research Branch and worked under Rick O'Brien and Larry Geiter. In 1991, she was promoted to Project Assistant with the Program Services Branch and promoted again in 1993 to Program Specialist with the Communications and Education Branch. With a rich institutional memory; fingertip access to a virtual goldmine of materials, resources, and information; and a "golden" can-do, service-oriented attitude, Dianne may well have personally helped more individuals both inside and outside of CDC than any other DTBE employee. She will be dearly missed.

Tom Privett has been selected for the vacant senior public health advisor position in the Los Angeles County TB Control Program. Tom has been on assignment to the Virginia State TB Program, serving as the director of the program since 1990. In Virginia his leadership skills have contributed toward progress and success in the completion of therapy through implementation of statewide DOT for public and private patients. Tom started his TB career with CDC in Los Angeles where he was responsible for numerous local activities involving program evaluation and consultation for eight of the county's health districts with special emphasis on the compilation and submission of program management reports, and the development and administration of the county's incentive program for homeless TB patients. He began his public health career in Florida in 1984 with the Palm Beach County Health Unit. In his new position, he will function as the senior public health advisor and manager of the Los Angeles County TB program. Tom relocated from Richmond, Virginia, to Los Angeles on October 11, 1998.

Robin Shrestha-Kuwahara, MPH, of the Prevention Effectiveness Section, Research and Evaluation Branch, and formerly an ASPH fellow, is now a full-time CDC employee.

Wanda Walton, Health Education Specialist, CEB, has returned to the division after participating in a long-term training program in health education/health promotion at the University of Alabama at Birmingham School of Public Health. Wanda's areas of special interest and concentration while attending the program included health behavior change (especially in regard to health care providers) and evaluation. Special projects that she will be working now that she has returned to the division include the field test of the TB Training Guide, assessment of the Essential Components of a TB Control Program, and implementation of the satellite broadcast of the TB Supplemental Modules (contact investigation, adherence to treatment, and surveillance in hospitals and institutions).

CALENDAR OF EVENTS

November 23-26, 1998
29th World Conference of the International Union Against TB and Lung Disease
Bangkok,Thailand
The Anti-Tuberculosis Association of Thailand
P.O. Box 52 Samsennai, Bangkok 10400, Thailand
Tel: 011-662-270-1033;
011-662-279-1354
Fax: 011-662-271-1547;
011-662-271-3146
E-mail: atat@ksc.th.com

December 9, 1998
TB Update Course
San Francisco, California
Training Coordinator
Francis J. Curry National TB Center
(415) 502-4600

February 15-19, 1999; April 19-23, 1999
Postgraduate Course on Clinical Management and Control of TB
Denver, Colorado
National Jewish Medical and Research Center
Catheryne J. Queen
Tel: (303) 398-1700
Fax: (303) 398-1906

February 24, 1999
1999 National TB Controllers Workshop
Chicago, Illinois
ALA of Metropolitan Chicago
Contact: Kitty McAndrews
Tel: (312) 243-2000
Fax: (312) 243-3954
E-mail: kmcandre@alamc.org

February 25-27, 1999
IUATLD N. American Region 4th Annual Meeting: "TB & HIV - Applying Advances"
Chicago, Illinois
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